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King & Spalding LLP			COLEMAN, KEITH A	
401 Congress Avenue				
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Austin, TX 78701			3747	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,480	BEILHARZ ET AL.	
	Examiner	Art Unit	
	KEITH COLEMAN	3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 8/21/2009.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/29/2009</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/17/2009 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuzuki et al. (US Patent No. 5,057,734)

With regards to claims 1, 2, and 14 , the patent to Tsuzuki et al. discloses a method for controlling a valve (7, See Figure 3) with a valve actuating device (piezoelectric mechanism 77), which is provided in the form of a piezo actuator (i.e.

piezoelectric element 77), with a valve element (i.e. valve 7), a valve body (1) and a valve seat (i.e. the interior of cavity 1 and orifices 3, See Figure 3), in which the method comprising the steps of: moving at a predetermined point in time (i.e. in increments of 200 microseconds, See Figure 12) the valve element (7) is moved at a predetermined point in time from a position in contact with the valve seat (See Figure 12) into a predetermined position away from the valve seat by a discharging process of the piezo actuator (77), dividing the discharging process is divided into a first discharging duration (i.e. cycles through in microseconds, Col. 12, Lines 65-68 through Col. 13, Lines 1-10), during which a predetermined first amount of electrical energy (i.e. 1000 volts to 0 volts, See Figure 12) is discharged from the piezo actuator (77), a subsequent holding time duration, during which the piezo actuator is not controlled (See Figure 12), and a subsequent second discharging duration, during which a predetermined second amount of electrical energy is discharged from the piezo actuator (77), and dependent on the waveform of a voltage at the piezo actuator which is characteristic of the oscillation behavior of the piezo actuator adapting, during the holding time duration, the holding time duration and/or the first discharging duration is adapted in order to ensure precise control of the valve (i.e. dependent on the LC oscillation circuits and controlling the valve without bounce, Col. 13, Lines 1-30).

With regards to claims 3 and 15, the patent to Tsuzuki et al. discloses wherein the holding time duration and/or the first discharging duration or the first charging duration is/are adapted dependent on the amplitude and/or the period of the waveform

of the variable (i.e. dependent on the piezoelectric actuator and cycles in microseconds and the LC oscillation circuit, See Col. 13, Lines 1-30) which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration (inherent in a LC oscillation circuit).

With regards to claims 4 and 16, the patent to Tsuzuki et al. discloses the holding time duration is adapted dependent on the period of the waveform of the variable which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration (See Col. 14, Lines 40-55, and See Figure 12).

With regards to claims 5 and 17, the patent to Tsuzuki et al. discloses wherein the first discharging duration or the first charging duration is adapted dependent on the amplitude of the waveform of the variable which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration (i.e. dependent on equations shown on Col. 12, Lines 30-36).

With regards to claims 6 and 18, the patent to Tsuzuki et al. discloses wherein the sum of the first charging duration and the holding time duration is limited to a maximum value (i.e. modulated in microseconds, Col. 9, Lines 6-15), which ensures that the valve element (20) is still in contact with the valve seat.

Claims 7-13, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuzuki et al. (US Patent No. 5,057,734) in view of Rodriguez-Amaya (US Patent Publication 2002/0113139)

With regards to claims 7, 12, and 19, the patent to Tsuzuki et al. discloses a control unit (See Figure 8), which comprises an outlet duct that is connected hydraulically to the working space (78), the piezo actuator (77) that forms a valve actuating device (See Figures 1 and 8), and the valve (7), whereby the valve comprises a valve element (7), a valve body (i.e. nozzle), a valve seat (i.e. interior of the nozzle shown in Figure 1) , wherein the valve is part of a pump/nozzle device with a pump (i.e. plunger 12 in hole 1) , which has a piston (12) and a working space (11), except positively disclosing an auxiliary control chamber which is disconnected hydraulically from the outlet duct when the valve element is in contact with the valve seat and which otherwise is connected hydraulically to the outlet duct.

The patent to Rodriguez-Amaya discloses wherein a valve (5) is part of a pump/nozzle device with a pump (2, See Figure 6), which has a piston (2) and a working space (1), an auxiliary control chamber (11 and 12) which is disconnected hydraulically from the outlet duct (3) when the valve element (5) is in contact with the valve seat and which otherwise is connected hydraulically to the outlet duct.

Since both references are concerned with injection phases (See Paragraph 20 from Rodriguez-Amaya et al. and Col. 3, Lines 1-20 from Tsuzuki et al.), it would have been obvious to a person of ordinary skill in the art at the time the invention was made

to provide the fuel injector of Tsuzuki et al. with wherein the valve is part of a pump/nozzle device with a pump , which has a piston and a working space, an auxiliary control chamber which is disconnected hydraulically from the outlet duct when the valve element is in contact with the valve seat and which otherwise is connected hydraulically to the outlet duct in view of the teaching to Rodriguez-Amaya, in order to compensate for pressure variations (See Paragraph 2 from Rodriguez-Amaya et al.)

With regards to claims 8, 13, and 20, the combination of Tsuzuki et al. and Rodriguez-Amaya discloses all the limitations of the claimed subject matter including Tsuzuki et al. disclosure of wherein the first discharging duration is limited to a minimum value (i.e. the controller cycles through in microseconds, See Figure 12), which ensures that the nozzle needle closes the nozzle (See Figure 12).

With regards to claim 9, the combination of Tsuzuki et al. and Rodriguez-Amaya discloses all the limitations of the claimed subject matter including Tsuzuki et al. disclosure of wherein the holding time duration and/or the first discharging duration or the first charging duration is/are adapted dependent on the amplitude and/or the period of the waveform of the variable which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration (i.e. inherent in a LC oscillation circuit and See Col. 12, Lines 30-40 and Figure 12).

With regards to claim 10, the combination of Tsuzuki et al. and Rodriguez-Amaya discloses all the limitations of the claimed subject matter including Tsuzuki et al. disclosure of wherein the holding time duration is adapted dependent on the period of the waveform of the variable which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration (i.e. inherent in a LC oscillation circuit and See Col. 12, Lines 30-40 and Figure 12).

With regards to claim 11, the combination of Tsuzuki et al. and Rodriguez-Amaya discloses all the limitations of the claimed subject matter including Tsuzuki et al. disclosure of wherein the first discharging duration or the first charging duration is adapted dependent on the amplitude of the waveform of the variable which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration (i.e. inherent in a LC oscillation circuit and See Col. 12, Lines 30-40 and Figure 12).

Applicant's Arguments

REMARKS

This Application has been carefully reviewed in light of the Final Office Action mailed March 17, 2009. At the time of the Final Office Action, Claims 1-20 were pending in this Application. Claims 1-20 were rejected. In view of its Request for Continued

Examination and this Preliminary Amendment, Applicants respectfully request reconsideration and favorable action in this case.

Rejections under 35 U.S.C. § 102

Claims 1-6 and 14-18 stand rejected by the Examiner under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,057,734 issued to Naoyuki Tsuzuki et al. ("Tsuzuki"). Applicants respectfully traverse and submit the cited art does not teach all of the elements of the claimed embodiment of the invention.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "the identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co. Ltd., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Applicants respectfully submit that the cited art as anticipated by the Examiner cannot anticipate the rejected Claims, because the cited art does not show all the elements of the present Claims.

[1]Tsuzuki fails to teach all claim elements because it does not teach a holding time duration between a first discharging duration and a second discharging duration. In particular, Claim 1 recites "dividing the discharging process into a first discharging duration, during which a predetermined first amount of electrical

energy is discharged from the piezo actuator, a subsequent holding time duration, during which the piezo actuator is not controlled, and a subsequent second discharging duration, during which a predetermined second amount of electrical energy is discharged from the piezo actuator." (Claim 1)(emphasis added). Claim 14 also recites a holding time duration. A similar holding time duration is claim for a charging process in claim 2. Figure 2A shows a timing waveform for the piezo voltage.

(Spec at Figure 2A). With reference to Figure 2A, the specification teaches a holding duration T5 during discharging. Firstly, the piezo actuator is discharged with a predetermined first amount of energy for a first discharging duration T4, and this actually takes place up to a point in time t6. Subsequent to this, the piezo actuator is not further discharged for a predetermined holding time duration T5, and this is actually up to a point in time t7. Subsequent to this, the piezo actuator is further discharged for a second discharging duration T6, during which a predetermined second amount of electrical energy is dissipated. (Sub Spec at ¶[0033]). A similar holding time duration T2 is disclosed during the charging process. (Sub Spec at ¶[0032]). Thus, holding time durations, during which the piezo actuator is not controlled, are expressly recited in claims 1 and 2.

Alternatively, Tsuzuki discloses closing a valve by a two stage process, where the stages charge for predetermined time periods and there is no holding time duration

between the two stages. First, Tsuzuki teaches a first charging stage. "Next, when the first-stage valve closing signal SI is generated, the thyristor 1051a is turned ON, so that an LC oscillation circuit is formed by the condenser 104a, the coil 1052, and the piezoelectric element 77." (Tsuzuki at 12:39-42). Tsuzuki teaches that this first stage lasts for a predetermine period of time and then the system immediately switches to the second stage. "Next, when a predetermined time such as 200 gs has passed, so that the valve member 67d reaches the periphery of the valve seat 67b, the second-stage valve closing ignition signal \$1' is generated, to turn ON the thyristor 1051b." (Tsuzuki at 12:66-13:2). The force applied by this second stage charge is maintained until the valve is opened. "In the above-mentioned state, after a predetermined time has passed, the valve opening ignition signal SQ is generated." (Tsuzuki at 13:22-23). **Thus, Tsuzuki fails to teach or suggest a holding time duration. The invention as claimed in claims 1, 2 and 14 are not anticipated by Tsuzuki. The invention as claimed in claims 3-6 and 15-18 is patentable for similar reasons.**

Because Tsuzuki fails to even mention a holding time duration, if fails to even suggest adapting a holding time duration, as claimed in the present claims. For example, claim 1 recites "dependent on the waveform of a voltage at the piezo actuator or a current through the piezo actuator which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration, adapting the holding time duration and/or the first discharging duration in order to ensure precise control of the valve." (emphasis added). Similarly, but relative to a charging process, claim 2 recites

"dependent on the waveform of a voltage at the piezo actuator or a current through the piezo actuator which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration, adapting the holding time duration and/or the first charging duration in order to ensure precise control of the valve." (emphasis added).

Claim 14 recites, "dependent on the waveform of a voltage at the piezo actuator or a current through the piezo actuator which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration, means for adapting the holding time duration and/or the first charging duration in order to ensure precise control of the valve." (emphasis added)

According to the specification, The holding time duration and/or the first discharging duration is/are adapted according to the waveform of a variable which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration. By the means, pressure oscillations which occur as a result of the release of the valve seat in a fluid that is flowing through the valve can also easily be greatly damped under different types of operating conditions of the valve. In addition, noise emissions can thus also be simply reduced.

The variable is preferably the amount of energy which is discharged from or fed to the piezo actuator, or the voltage which drops at the piezo actuator, or the current which flows through the piezo actuator, or the charge stored in it.

(Specification at ¶¶ 0009-0010). Alternatively, Tsuzuki teaches that the second stage begins immediately after the second stage and expressly teaches that the first stage lasts for a set time duration. In particular, it teaches that "when a predetermined time such as 200 kts has passed, so that the valve member 67d reaches the periphery of the valve seat 67b, the second- stage valve closing ignition signal \$t' is generated, to turn ON the thyristor 105lb." (Tsuzuki at 12:66-13:2). In the illustrative embodiment, Tsuzuki teaches that the first stage lasts for 200 kts and without any suggestion that this duration can be adapted or changed. Because Tsuzuki fails to teach or suggest varying the time of the first stage and does not even teach a holding time duration, much less varying a holding time duration, the invention as claimed in claims 1, 2 and 14 is patentable in view of Tsuzuki. The invention as claimed in claims 3-6 and 15-18 is patentable for similar reasons.

Rejections under 35 U.S.C. §103

Claims 7-13 and 19-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tsuzuki in view of U.S. Patent Application Publication No. 2002/0113139 by Nestor Rodriguez-Amaya et al. ("Rodriguez-Amaya"). Applicants respectfully traverse and submit the cited art combinations, even if proper, which Applicants do not concede, does not render the claimed embodiment of the invention obvious.

[2]In order to establish a prima facie case of obviousness, the references cited by the Examiner must disclose all claimed limitations. In re Royka, 490 F.2d 981,180 U.S.P.Q. 580 (C.C.P.A. 1974). Even if each limitation is disclosed in a combination of references, however, a claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). Rather, the Examiner must identify an apparent reason to combine the known elements in the fashion claimed. Id. "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Id., citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Finally, the reason must be free of the distortion caused by hindsight bias and may not rely on ex post reasoning. KSR, 127 S.Ct. at 1742. In addition, evidence that such a combination was uniquely challenging or difficult tends to show that a claim was not obvious. *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc. and Mattel, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007), citing KSR, 127 S.Ct. at 1741.

Tsuzuki fails to teach all claim elements because it does not teach a holding time duration between a first discharging duration and a second discharging duration. In particular, Claim 1 recites "dividing the discharging process into a first discharging duration, during which a predetermined first amount of electrical energy is discharged from the piezo actuator, a subsequent holding time duration, during which the piezo

actuator is not controlled, and a subsequent second discharging duration, during which a predetermined second amount of electrical energy is discharged from the piezo actuator." (Claim 1)(emphasis added). Claim 14 also recites a holding time duration. A similar holding time duration is claim for a charging process in claim 2. Figure 2A shows a timing waveform for the piezo voltage.

(Spec at Figure 2A). With reference to Figure 2A, the specification teaches a holding duration T5 during discharging.

Firstly, the piezo actuator is discharged with a predetermined first amount of energy for a first discharging duration T4, and this actually takes place up to a point in time t6. Subsequent to this, the piezo actuator is not further discharged for a predetermined holding time duration T5, and this is actually up to a point in time t7. Subsequent to this, the piezo actuator is further discharged for a second discharging duration T6, during which a predetermined second amount of electrical energy is dissipated.

(Sub Spec at ¶[0033]). A similar holding time duration T2 is disclosed during the charging process. (Sub Spec at ¶[0032]). Thus, holding time durations, during which the piezo actuator is not controlled, are expressly recited in claims 1 and 2.

Alternatively, Tsuzuki discloses closing a valve by a two stage process, where the stages charge for predetermined time periods and there is no holding time duration between the two stages. First, Tsuzuki teaches a first charging stage. "Next, when the first-stage valve closing signal S1 is generated, the thyristor 1051a is turned ON, so that an LC oscillation circuit is formed by the condenser 104a, the coil 1052, and the piezoelectric element 77." (Tsuzuki at 12:39-42). Tsuzuki teaches that this first stage lasts for a predetermine period of time and then the system immediately switches to the second stage. "Next, when a predetermined time such as 200 gs has passed, so that the valve member 67d reaches the periphery of the valve seat 67b, the second-stage valve closing ignition signal S1' is generated, to turn ON the thyristor 1051b." (Tsuzuki at 12:66-13:2). The force applied by this second stage charge is maintained until the valve is opened. "In the above-mentioned state, after a predetermined time has passed, the valve opening ignition signal SQ is generated." (Tsuzuki at 13:22-23). Thus, Tsuzuki fails to teach or suggest a holding time duration. Rodriguez-Amaya also does not teach this feature. Thus, the invention as claimed in claim 7-13 and 19-20 is not obvious in view of Tsuzuki and Rodriguez-Amaya.

Because Tsuzuki fails to even mention a holding time duration, if fails to even suggest adapting a holding time duration, as claimed in the present claims. For example, claim 1 recites "dependent on the waveform of a voltage at the piezo actuator or a current through the piezo actuator which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration, adapting the holding time duration

and~or the first discharging duration in order to ensure precise control of the valve." (emphasis added). Similarly, but relative to a charging process, claim 2 recites "dependent on the waveform of a voltage at the piezo actuator or a current through the piezo actuator which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration, adapting the holding time duration and~or the first charging duration in order to ensure precise control of the valve." (emphasis added). Claim 14 recites, "dependent on the waveform of a voltage at the piezo actuator or a current through the piezo actuator which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration, means for adapting the holding time duration and~or the first charging duration in order to ensure precise control of the valve." (emphasis added)

According to the specification,

The holding time duration and/or the first discharging duration is/are adapted according to the waveform of a variable which is characteristic of the oscillation behavior of the piezo actuator during the holding time duration. By the means, pressure oscillations which occur as a result of the release of the valve seat in a fluid that is flowing through the valve can also easily be greatly damped under different types of operating conditions of the valve. In addition, noise emissions can thus also be simply reduced.

The variable is preferably the amount of energy which is discharged from or fed to the piezo actuator, or the voltage which drops at the piezo actuator, or the current which flows through the piezo actuator, or the charge stored in it.

(Specification at ¶¶ 0009-0010). Alternatively, Tsuzuki teaches that the second stage begins immediately after the second stage and expressly teaches that the first stage lasts for a set time duration. In particular, it teaches that "when a predetermined time such as 200 Its has passed, so that the valve member 67d reaches the periphery of the valve seat 67b, the second- stage valve closing ignition signal \$1' is generated, to turn ON the thyristor 105lb." (Tsuzuki at 12:66-13:2). In the illustrative embodiment, Tsuzuki teaches that the first stage lasts for 200 Its and without any suggestion that this duration can be adapted or changed. Rodriguez- Amaya also does not teach this feature. Because Tsuzuki and Rodriguez-Amaya fail to teach or suggest varying the time of the first stage and does not even teach a holding time duration, much less varying a holding time duration, the invention as claimed in claims 1, 2 and 14 is patentable in view of Tsuzuki and Rodriguez-Amaya. The invention as claimed in claims 7- 13 and 19-20 is patentable for similar reasons.

Examiner's Response to Arguments

With regards to Applicant's first argument, Applicant is reminded to see MPEP 2125 (In re Aslanian, 590 F.2d 911, 200 USPQ 500 (CCPA 1979).)

The origin of the drawing is immaterial. For instance, drawings in a design patent can anticipate or make obvious the claimed invention as can drawings in utility patents. When the reference is a utility patent, **it does not matter that the feature shown is unintended or unexplained in the specification.** The drawings must be evaluated for what they reasonably disclose and **suggest to one of ordinary skill in the art.**

In this case, the patent to **Tsuzuki et al. (US Patent No. 5,057,734)** discloses the claimed subject as shown below.

Closed(i.e. in contact with valve seat)

Fig.12A

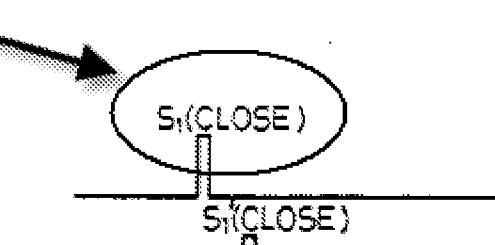


Fig.12B

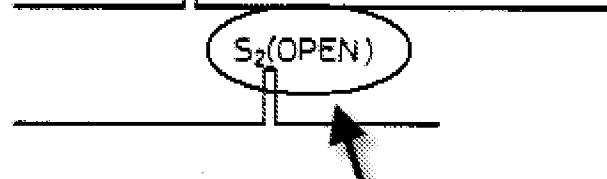


Fig.12C

Modifying the force to prevent bounce (i.e. precise control, See Col. 13, Lines 19-22)

Fig.12E P

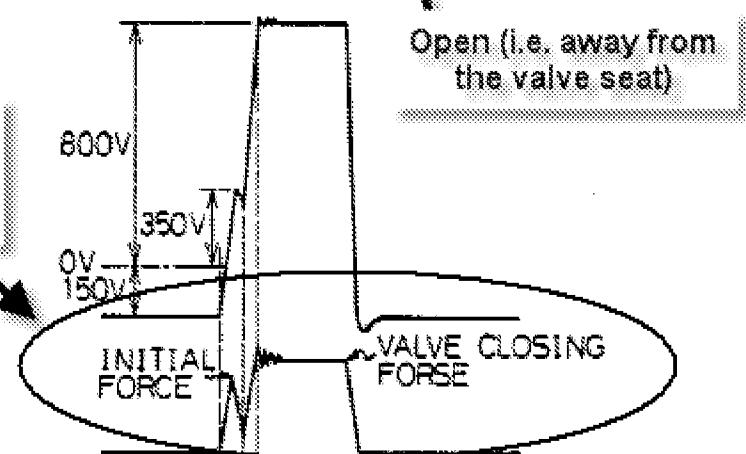
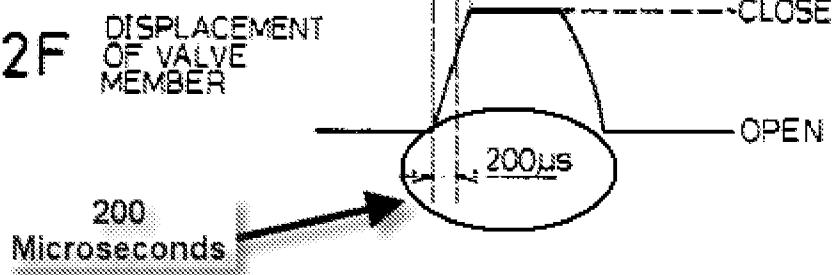


Fig.12F DISPLACEMENT OF VALVE MEMBER



With regards to Applicant's second argument, Applicant has misconstrued the In re Royka case in regards to the 103 rejection.

"There remains the § 103 rejection of claims 33 and 34. Do they, taken together with all of the limitations of claim 28 from which they depend, define obvious subject matter? The difference between claim 28 and these two dependent claims is that they add the limitations to xerography. If Bernstein and Reid showed the claimed invention except for xerography, the addition of the Lein reference would make the subject matter of the claims obvious. But that is not the situation here. Adding the knowledge of xerographic technology to Bernstein or Reid still does not make the invention of claims 33 and 34 obvious for the same reasons we have given above in discussing anticipation. The essence of appellants' invention, as set forth in claim 28, is still missing notwithstanding the addition of the Lein reference and we see nothing in the combinations of references which would have made the invention obvious to one of ordinary skill in the art at the time it was made. We will, therefore, reverse this rejection."

The 102 rejection discussed in the opinion clearly states,

"It is elementary that to support an anticipation rejection, all elements of the claim must be found in the reference."

The opinions of this case clearly state to support a 103 rejection, not all limitations have to be explicitly disclosed by the cited references. To further bolster Examiner's point, the opinion explicitly states,

"If Bernstein and Reid showed the claimed invention except for xerography, the addition of the Lein reference would "make" the subject matter of the claims obvious. "

Thus, Applicant has clearly misconstrued the case. Furthermore, Applicant is reminded to see MPEP 2145 regarding only contending the **Tsuzuki et al. (US Patent No. 5,057,734) reference.**

IV. ARGUING AGAINST REFERENCES INDIVIDUALLY

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this case, Applicant contends only that the Tsuzuki et al. does not disclose "a holding time duration" and merely elides over the teachings of the cited references as a whole. Furthermore, the patent to Tsuzuki et al clearly ostensibly discloses Applicant's

claimed subject matter in view of MPEP 2125. As such, Applicant's arguments are moot and untenable.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bock et al. (US Patent No. 6,766,791) shows the current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 5:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571)272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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